

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-40. (cancelled)

41. (currently amended) Ionogels as obtained by implementation of ~~the process of claim 24~~, a process comprising a stage of mixing an ionic liquid with at least one molecular precursor of general formula:

$R'^x(RO)_{4-x}Si$

in which:

x is an integer varying from 0 to 4,

R represents an alkyl group with 1 to 4 carbon atoms,

and

R' is selected from the group consisting of an alkyl group comprising from 1 to 4 carbon atoms, an aryl group comprising from 6 to 30 carbon atoms, and a halogen atom, and,
optionally, in the presence of a carboxylic acid, the mixture then being left to stand for one or more days until a gel is obtained, formed by polycondensation of the molecular precursor(s), containing within it the ionic liquid, wherein,

the ionogels are monolithic solids,

the ionogels are stable up to temperatures of approximately 350°C,

the ionogels transparent, and
the ionogels are ionic conductors having an ionic
conductivity of between approximately 10^{-4} and 10^{-3} S.cm⁻¹ at
ambient temperature and between 10^{-2} and 10^{-1} at 230°C.

~~said ionogels comprising an ionic liquid, confined~~
~~within a continuous solid network formed from at least one~~
~~molecular precursor.~~

42-43. (cancelled)

44. (currently amended) ~~Ionogels of The ionogels~~
according to claim 41, characterized by the presence of
comprising a continuous solid network.

45. (currently amended) ~~Ionogels of The ionogels~~
according to claim 41, characterized in that they wherein the
ionogels have the following mechanical properties:

- a Young's modulus ~~comprised~~ between approximately 50 and approximately 100 MPa, ~~in particular comprised~~ ~~between approximately 52 and approximately 75 MPa, and~~ ~~preferably with an average value equal to~~ ~~approximately 63 MPa, and~~
- a stress at break ~~comprised~~ between approximately 0.1 and approximately 1.5 MPa, ~~in particular comprised~~ ~~between approximately 0.44 and approximately 1.31 MPa,~~

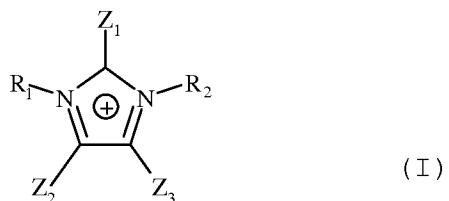
and preferably with an average value equal to approximately 0.82 MPa.

46. (currently amended) ~~Ionogels of The ionogels according to claim 41, characterized in that they are wherein the ionogels are~~ stable in aqueous medium.

47-49. (cancelled)

50. (new) The ionogels according to claim 41, wherein the ionic liquid is a liquid comprising an imidazolium or pyridinium nucleus as a cation, optionally substituted by one or more alkyl groups with 1 to 4 carbon atoms.

51. (new) The ionogels according to claim 50, wherein the cation is an imidazolium nucleus of the following formula (I):



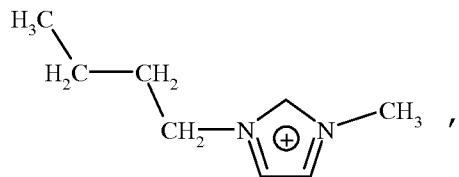
in which:

R₁ and R₂ represent an alkyl group with 1 to 4 carbon atoms, and

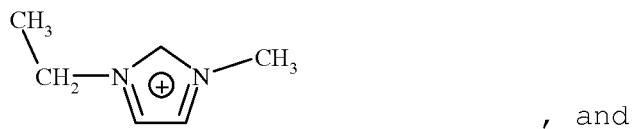
Z_1 , Z_2 and Z_3 represent a hydrogen atom or an alkyl group with 1 to 4 carbon atoms.

52. (new) The ionogels according to claim 50, wherein the cation is selected from the group consisting of:

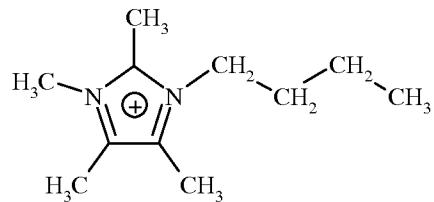
1-butyl-3-methylimidazolium of the following formula:



1-ethyl-3-methylimidazolium of the following formula:



1-butyl-2, 3, 4, 5-tetramethylimidazolium of the following formula:

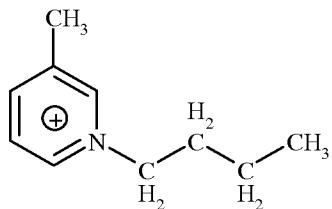


53. (new) The ionogels according to claim 50, wherein the cation is a pyridinium nucleus of the following formula (II):



in which R_1 and R_2 represent a hydrogen atom or an alkyl group with 1 to 4 carbon atoms.

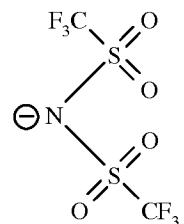
54. (new) The ionogels according to claim 50, wherein the cation is 1-butyl-3-methylpyridinium of the following formula:



55. (new) The ionogels according to claim 41, wherein the ionic liquid contains, as anions, those chosen from the halides and perfluorinated anions.

56. (new) The ionogels according to claim 55, wherein the anion is:

- bis(trifluoromethylsulphonyl)imide of formula:



- hexafluorophosphate of formula PF_6^- .

57. (new) The ionogels according to claim 50, wherein the ionic liquid is selected from the group consisting of:

1-butyl-3-methylimidazolium
bis(trifluoromethylsulphonyl)imide,
1-ethyl-3-methylimidazolium
is(trifluoromethylsulphonyl)imide, and
1-butyl-3-methylimidazolium hexafluorophosphate.

58. (new) The ionogels according to claim 41, wherein the molecular precursor is selected from the group consisting of tetramethoxysilane, methyltrimethoxysilane, phenyltriethoxysilane, and mixture thereof.

59. (new) The ionogels according to claim 41, wherein the ionic liquid/molecular precursor molar ratio in the mixture is 1/2.

60. (new) The ionogels according to claim 41, wherein the carboxylic acid is formic acid.

61. (new) The ionogels according to claim 41, wherein the molecular precursor/carboxylic acid molar ratio in the mixture is 1/50.

62. (new) The ionogels according to claim 41, wherein the mixture is left to stand for 7 to 9 days under ambient atmosphere and temperature.

63. (new) The ionogels according to claim 41, wherein the mixture is aged under ultrasound for 24 hours.

64. (new) The ionogels according to claim 45, wherein the Young's modulus is between approximately 52 and approximately 75 MPa, and the stress at break is between approximately 0.44 and approximately 1.31 MPa.

65. (new) The ionogels according to claim 64, wherein the Young's modulus has an average value equal to approximately 63 MPa, and a stress at break has an average value equal to approximately 0.82 MPa.